Frailty predicts medication-related harm requiring healthcare: A UK multicentre prospective cohort study

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Introduction

Frailty has been under investigated as a risk factor for medication-related harm (MRH) in older adults[1]. We sought to determine whether frailty is independently associated with MRH in a large multicentre prospective cohort, the PRIME study.

Methods

The PRIME study recruited 1280 older adults at hospital discharge from 5 hospitals in England between 2013 to 2015[2]. MRH and associated healthcare use within 8-weeks post-discharge were identified by senior pharmacists using (1) hospital readmission data, (2) primary care records, (3) patient telephone interviews. Based on the Rockwood approach[3], we developed a frailty index including 55 deficits from multiple domains (morbidity, cognition, mood, strength and mobility, nutrition, daily function). Frailty was defined using the established cut-off of $\geq$20% deficits[4], and internally validated using Kaplan-Meier plots comparing survival in frail and non-frail patients. We then used logistic regression analysis to investigate the relationship between frailty and MRH requiring healthcare.

Results

1116 patients completed follow-up (median age 81.9 years, range 65-103 years, 58.4% female). 446 patients (40%) were frail in our cohort. 36% of frail patients experienced MRH compared with 25% in non-frail patients. There was a strong relationship between frailty and MRH (OR 1.67, 95% CI 1.29-2.17, $p<0.001$). A significant relationship between frailty and MRH remained on multivariable regression, adjusting for polypharmacy, age and gender (OR 1.37, 95% CI 1.04-1.81, $p=0.027$). Frail patients had significantly reduced 18-month survival (Log-Rank test $p<0.001$).

Key Conclusions

Frailty is a predictor of MRH requiring healthcare, independent of polypharmacy.

References

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